

REMARKS**Election/Restriction Requirement**

The Restriction Requirement still does not comply with the Manual of Patent Examining Procedure (8th Edition, Revised August, 2006; "the MPEP") for reasons set forth in Applicants' February 8, 2007 Reply. The Examiner's continual placement of the burden of proof on Applicants to traverse the Requirement is unfounded without first properly setting out a Restriction Requirement in compliance with the MPEP. Restriction Requirements are made properly when groups of claims to inventions are found to be either independent or distinct. See MPEP § 806. The Examiner must point out the reasons why such claim species are considered either independent or distinct. Every requirement to restrict has two aspects: (A) the reasons (as distinguished from the mere statement of conclusion) why each invention as claimed is either independent or distinct from the others; and (B) the reasons why there would be a serious burden on the Examiner if restriction is not required (i.e., the reasons for insisting upon restriction therebetween as set forth in the following sections). A mere statement of conclusion is inadequate. See MPEP § 808.

Further, it should be noted that the features described in the claims of Species A-F have been examined by the Office together in the three prior substantive Office Actions issued in this case. In particular, the Office mailed a Restriction Requirement dated February 10, 2005, an Action dated June 8, 2005, and a Final Action dated March 13, 2006. In each of the previous substantive Actions, the Office examined the claims of Species A-F together. There clearly would be no additional or unusual burden on the Examiner to continue examination as it has been conducted so far in this case.

In Applicants' Reply of July 5, 2007 responsive to the Election/Restriction Requirement dated May 7, 2007, Applicants provisionally elected with traverse Species A described with respect to Figure 1 drawn to an optical polarizer film and the sub-species identified as Sub-species 2 directed to a conductive light blocking material. Claims 14-23 are believed to read on the elected species and sub-species. Although the Examiner has rejected Claims 14-23 in the present Action, the Examiner has failed to indicate acceptance of Applicants' provisional election. Applicants hereby request clarification from the Examiner of which inventions are

being examined. Applicants maintain the provisional election of Claims 14-23 and the traversal of the Restriction Requirement as set out above. Reconsideration is respectfully requested. Accordingly, Applicants are filing a Petition From Requirement For Restriction Under 37 C.F.R. §1.144 concurrently.

Double Patenting

The Examiner has objected to Claims 16 and 23 as being substantial duplicates. Applicants respectfully disagree. Although Claims 16 and 23 recite similar limitations, they depend from Claims 15 and 14, respectively. A difference in recitation of the claim number upon which two claims are dependent certainly cannot be considered “a slight difference in wording.” Rather, based on the difference in dependency, Claim 16 contains the additional limitation recited in Claim 15, “wherein the conductive light-blocking material includes a plurality of conductive particles.” This limitation is not present in Claim 23. Therefore, Claim 16 is narrower than Claim 23 and reconsideration is respectfully requested.

Claim Rejections Under 35 U.S.C. §102

Claims 1-27, 32 and 33 are pending, of which Claims 1-13, 24-27, 32 and 33 are withdrawn from consideration. Claim 14 is independent. Claims 14-22 were rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 6,348,995 to Hansen et al. (hereinafter, “Hansen”), United States Patent No. 6,356,389 to Nilsen et al. (hereinafter, “Nilsen”), or both Hansen and Nilsen. Although the Office Action indicates the rejection of all pending claims under consideration, there is no discussion in the Office Action setting out a rejection of Claim 23.

Without limitation to the claims, the present invention provides a subwavelength moth-eye structure formed on a substrate. As provided in the specification, moth-eye structures are explained in more detail in U.S. Application No. 09/438,912, now issued as U.S. Patent 6,356,389 on March 12, 2002, commonly assigned with the present application to Reflexite Corporation, the teachings of which were incorporated in their entirety in the application filed December 4, 2003.

Applicants' claimed invention includes a plurality of moth-eye microstructures. As described on page 6, lines 8-19, a moth-eye anti-reflection surface is one in which the reflection of light is reduced by the presence of a regular array of small protuberances covering the surface. The spacing of the protuberances is less than the wavelength of light for which anti-reflection is sought. A moth-eye surface can be understood in terms of a surface layer in which the refractive index varies gradually from unity to that of the bulk material. Without such a layer, the Fresnel reflection coefficient at an interface of two media is equal to $((n_1 - n_2)/(n_1 + n_2))^2$, where n_1 and n_2 are the refractive indices of the media. However, if there is a gradual change of refractive index, net reflectance can be regarded as the result of an infinite series of reflections at each incremental change in refractive index. Because each reflection comes from a different depth from the surface, each has a different phase. If a transition takes place over an optical distance of $\lambda/2$, all phases are present, there is destructive interference and the reflectance falls to zero.

As set forth on page 5, lines 16-18 and with reference to FIG. 2 of the present application, the moth-eye structure has an amplitude (A) of about 0.4 micrometers and a period (P) of less than about 0.2 micrometers and is sinusoidal in appearance. The moth-eye structure greatly increases transmission of light through the structure. As shown in FIG. 12, and with reference to page 11, line 27 through page 12, line 7, it is known that essentially 0% of the light component that is perpendicular to the linear moth-eye rows is reflected at each moth-eye boundary because the moth-eye acts as an anti-reflection surface in this direction. It is also known that approximately 4% of the light component which is parallel to the linear moth-eye is reflected at each linear moth-eye boundary because the light wave sees a flat surface rather than a moth-eye surface. Thus, with sufficient moth-eye layers, substantially all of the light component which is parallel to the linear moth-eye structures is reflected and only the light perpendicular to the linear moth-eye structures is transmitted therethrough to create a linear reflecting polarizer.

Claims 14, 15 and 17-22 were rejected under 35 U.S.C. §102(e) as being anticipated by Hansen. It is respectfully submitted that the conductive elements 46 in Hansen are not subwavelength moth-eye optical microstructures. Hansen discloses in FIGS. 5A and 5B a polarizer device 45 that includes a grid of closely spaced conductive elements 46 supported on a substrate 47. The upper surface 48 of the conductive elements has been given a texture. There is no disclosure in Hansen that the closely spaced conductive elements are moth-eye structures.

The moth-eye effect should not be confused with that of reducing the specular reflectance by roughening. Roughness merely redistributes the reflected light as diffuse scattering and degrades the transmitted wavefront. With the moth-eye structure, there is no increase in diffuse scattering, the transmitted wavefront is not degraded and the reduction in reflection gives rise to a corresponding increase in transmission. See application, page 7, lines 17-21. Thus, Hansen fails to disclose moth-eye optical microstructures and, therefore, the rejection is traversed.

Claims 14-16 and 20 were rejected under 35 U.S.C. §102(e) as being anticipated by Nilsen. Nilsen, commonly assigned with the present application to Reflexite Corporation, is discussed at length in the present application and incorporated by reference in the present application in its entirety. Nilsen describes the moth-eye structures, as discussed above. Although Nilsen discloses the moth-eye structures recited in the claims as applied to collimating films, Nilsen makes no mention of the use of such moth-eye structures in a polarizer film with a conductive light-blocking material disposed in at least some of the valleys of the moth-eye structure. Thus, Nilsen fails to disclose the claimed optical polarizer film and, therefore, the rejection is traversed.

With regard to the Examiner's rejection of Claim 14, both Hansen and Nilsen fail to teach the claimed invention. As discussed above, Hansen fails to teach a subwavelength moth-eye structure and a light-blocking material disposed in at least some of the valleys providing polarization. Further, Nilsen fails to teach such moth-eye structures in a polarizer film with a conductive light-blocking material disposed in at least some of the valleys of the moth-eye structure. For these reasons, the Examiner's rejection of Claim 14 is traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 15, both Hansen and Nilsen fail to teach the conductive light-blocking material including a plurality of conductive particles. Rather, Hansen teaches the use of a polarizer device comprised of a grid of closely spaced, elongated, separated conductive elements. In the Examiner's rejection of Claim 15 under Nilsen, it is believed that the Examiner mistakenly referred to Hansen. Nevertheless, Hansen makes use of particles in curing the prism and diffuse layers of its diffuser, not in providing polarization. Further, Claim 15 is dependent on Claim 14 and contains the limitations of the base claim. For

these reasons, the Examiner's rejection of Claim 15 is traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 16, Nilsen fails to teach a transparent coating dispersed on the polarizer film. Rather, Nilsen teaches a surface 44 of the prism film 40. Further, Claim 16 is dependent on Claim 14 and contains the limitations of the base claim. For these reasons, the Examiner's rejection of Claim 16 is traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claims 17 and 18, Hansen fails to teach the plurality of conductive particles including nanoparticles or particles about 0.2 micrometers or smaller in size. Rather, Hansen, as cited by the Examiner, teaches the size or length L of component surfaces of the conductive elements, but makes no mention of the size of particles, let alone particles providing polarization. Further, Claims 17 and 18 are dependent on Claim 14 and contain the limitations of the base claim. For these reasons, the Examiner's rejections of Claims 17 and 18 are traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 19, Hansen fails to teach the claimed group of conductive particles. Rather, Hansen, as cited by the Examiner, only teaches the use of aluminum or silver and fails to teach the use of conductive particles. Further, Claim 19 is dependent on Claim 14 and contains the limitations of the base claim. For these reasons, the Examiner's rejection of Claim 19 is traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 20-22, Claims 20-22 are dependent on Claim 14 and contains the limitations of the base claim. For these reasons, the Examiner's rejections of Claims 20-22 are traversed and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 23, the Examiner fails to indicate under which article of prior art Claim 23 stands rejected. Therefore, the Examiner has failed to provide a prima facie case of anticipation. Further, Claim 23 is dependent on Claim 14 and contains the limitations of the base claim. For these reasons, the Examiner's rejection of Claim 23 is traversed and reconsideration is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By



Gerald P. Kazanjian

Registration No. 61,699

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Date: 1/31/08